



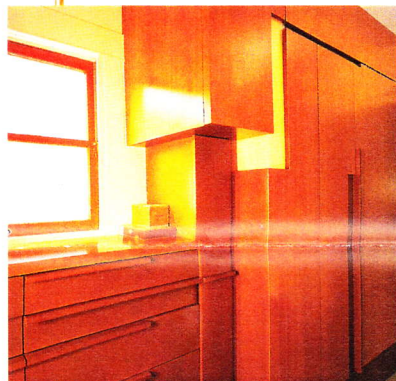
COMPOSITE  
PANEL  
ASSOCIATION™

# Second WAVE

SIXTH EDITION THE NEW GENERATION OF COMPOSITE PANEL PRODUCTS

## METROPOLITAN HOME- FEATURED ARCHITECT USES MDF CREATIVELY IN CLIENTS' HOMES — AND HIS OWN

With architects across the country increasingly at home specifying particleboard and medium density fiberboard (MDF) for their designs, it's no surprise that some are literally at home with these composite panel products.



Subtly contrasting layers of stained MDF and Douglas fir veneers create this intriguing cabinet treatment in architect Shortridge's seaside cottage.

Beverly Hills architect Steven Shortridge, for example, chose MDF for an interior application in his own Venice, California, cottage, a renovation project that was featured in the March/April 1999 issue of trend-setting *Metropolitan Home*. In addition, Shortridge, a partner at Callas Shortridge Architects, has used MDF to execute designs for clients, and some of these innovative projects have also been showcased on the pages of the upscale national shelter magazine.

*Metropolitan Home* recently described Shortridge as "an esteemed young architect who worked his way up the ranks of Frank Israel's award-winning practice," adding that "Shortridge has inherited his mentor's ground-breaking modernism and transformed it into a color-saturated, formally inventive aesthetic all his own."

In the redesign of his vintage 750-square-foot seaside home, Shortridge used MDF, partially veneered in Douglas fir, to create his home's built-in cabinetry system.

"MDF makes up the entire inside, or core, of the cabinetry but it's also expressed on the outside, with much of the cabinetry left strictly as MDF. This treatment lets MDF be what it is," Shortridge explains. On some segments of the cabinets, a skin of Douglas fir is veneered over the MDF to provide a subtle contrast.

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## MDF and Particleboard Are Key Players in Tampa Bay Buccaneers' New Stadium

As mindfully as a quarterback calls each play, an architect must choose the product that best suits the application. For interior architect David Wagner, AIA, of Wagner Murray Architects, the task was the design of the entry lobbies, club levels and luxury suites of Raymond James Stadium, which kicked off its first season for the Tampa Bay Buccaneers in September, 1998.

Composite panel products proved to be top scorers in executing Wagner's vision for the Bucs' new home. Approximately 21,250 square feet of MDF and 15,000 square feet of particleboard were chosen as substrates for walls, lounge areas, sky boxes and other public spaces throughout the new facility.

To comply with building codes requiring a fire rated substrate and to satisfy the aesthetic and practical demands of his overall design scheme, the Charlotte, North Carolina, architect selected fire retardant MDF panels for the 95 feet by 75 feet walls in the stadium lobbies.

Fire retardant MDF meets the Class 1 requirement in accordance with Underwriters Laboratory (UL) 732 Flame Rating, without sacrificing strength or machinability. Manufacturers of this specialty composite panel product include Willamette Industries, CanFibre and Medite.

### Architect Drafts Particleboard and MDF

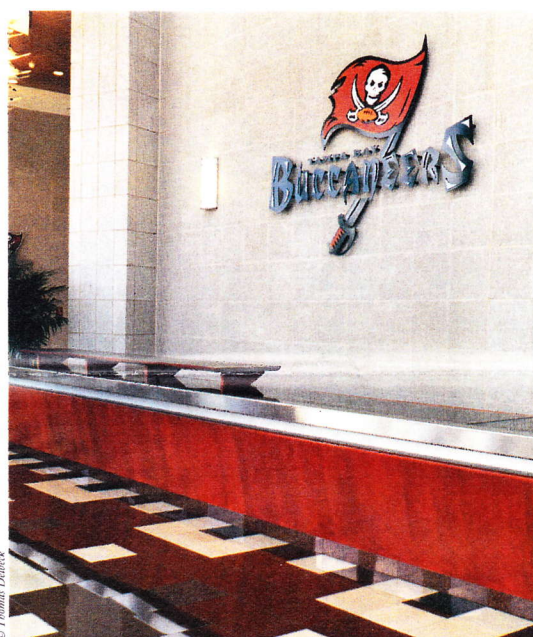
"I typically spec MDF for any application that requires a dimensionally stable, durable, primary surface material," Wagner said. "MDF is an economical, effective way to cover large surfaces."

The vast expanse of wall in the entry lobbies creates a dramatic backdrop for escalators that rise up in the midst of two six-story atria. To minimize damage from thousands of fans using the escalators, the 4 feet by 8 feet MDF panels were edgebanded with maple veneer, and topped with a finish coat of white paint after installation.

MDF's working properties solved several potential problems in this heavily trafficked area. For example, surface irregularities would have been impossible to hide on the two massively scaled walls thanks to their location inside the glass atria, so MDF's surface smoothness was critical. In addition, less than one-inch spaces between panels made MDF's stability essential in creating the straight, clean lines intended by the designer.

MDF also made the cut in many other areas of the stadium.

"All of the luxury suite cabinet doors were constructed with an MDF substrate," noted Wagner. "And the illuminated base cabinet and counter of the bars in the club lounge were also manufactured with MDF substrates, as was the lounge area's red, wedge-shaped backdrop panel."



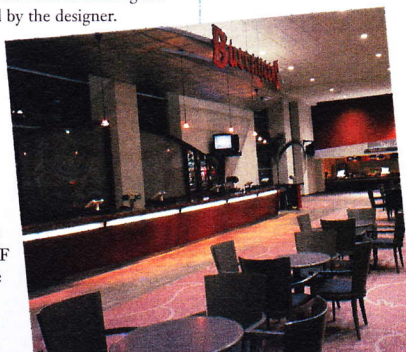
Fire-retardant, durable MDF panels create the impressive soaring wall in the heavily trafficked lobby of the Buccaneers' stadium.

In addition, team lockers were constructed with a clear finish maple veneer on an MDF core.

Particleboard was also used extensively in the interior of the Bucs' new stadium, according to Tim Belcher, project manager and millwork fabricator for Mill-Rite Woodworking Company, the Tampa Bay-area architectural woodworking firm that executed Wagner's design for Raymond James Stadium.

"We did all the luxury sky boxes with particleboard cores," Belcher explained. "In the lounge, the wet bar was constructed with particleboard cores and a melamine veneer, and the drink rails were made with a particleboard substrate finished with plastic laminate and a nice wood edge along the front. In the concession areas, we constructed storage casework with a particleboard core laminated with thermofused melamine (TFM).

"Football fans can be pretty rowdy," Belcher noted, "but MDF and particleboard are durable enough to hold up well in these public areas."



In the club lounge of the Bucs' new home, the bar's illuminated base and counter plus a red accent wall were manufactured with MDF substrates.

© Thomas Delbeck



# WHAT'S AFOOT: Beautiful, Diverse Commercial Floors

**W**hether you're out shopping, restaurant hopping, or dancing the night away, there's a greater chance than ever before that you're stepping out on composite panel flooring products. Laminate flooring and floors with particleboard underlayment (PBU) are increasingly the choice for commercial installations from television studios to museum galleries across North America.



**This action-packed MSNBC studio relies on a high-performance, low-maintenance laminate floor from Wilsonart.**

At the State Museum of Pennsylvania in Harrisburg, which draws approximately 300,000 visitors annually, laminate flooring was recently chosen for the Time Line Section of the Archaeology Gallery.

"Maintenance was a big issue because we don't have a large housekeeping staff," says Janet Johnson, assistant curator for the Museum's archaeology section. "We also hold receptions in the Gallery and were told that laminate flooring will withstand high heels and wine spills. We have 1,000 students a day in the fall and spring, and we're pleased that rubber sneaker marks clean up easily."

## The Look of Wood Without the Headaches

Good looks are a key drawing card in a host of other commercial installations where first impressions are critical.

"Restaurateurs and retailers love wood flooring's ambience, but not its maintenance issues," says DeMartino. "They've responded positively to wood-patterned laminate flooring because it gives them the look of real wood without the problems of waxing and refinishing."

"Attractiveness was foremost in our decision. We wanted the look of wood floor planks to match the rest of our new store design," says George Chow, manager of store design and development for Blockbuster. "The maple Wilsonart pattern we picked is light enough to make the store seem brighter, but has enough pattern to hide traffic wear. Laminate flooring is more durable, easier to maintain, and more cost effective than wood flooring."

Jim Reardon, architect/director of Sperry and Partners, Ltd., agrees: "We were concerned with aesthetics and durability, and we chose laminate flooring because it outperforms wood flooring." Reardon designed two new student residences, which opened last fall, for St. Francis Xavier University (Canada). He chose Uniboard's maple-look laminate flooring to complement the maple millwork and furniture used throughout the buildings.

## Bonus Benefits

Hair salons have also found laminate flooring to be a cut above other alternatives.

"We had completely destroyed our commercial linoleum floors," says Ann Bryan, owner of Shear Delight Hair Designs in Dallas who chose a product from Bruce Laminate Floors/Triangle-Pacific in her quest for flooring that would hold up to hair spray, gels and even hair dye. "The laminate floors are beautiful and still look as new as the day they were installed more than a year ago."

At Great Clips, a North American hair care retailer with more than 200 new locations annually, Wilsonart laminate flooring was installed in several franchises last year. Chosen for its durability and easy

maintenance, the product has provided some unforeseen benefits, according to Roger Koll, director of facilities and purchasing for Great Clips.

"Salon owners like it that laminate flooring damp mops easily after each customer, but they also found an unexpected bonus: stylists love it because it's more comfortable underfoot. They tell us they feel less fatigue working on this floor," says Koll. "In addition, the flooring went right over the top of existing flooring, meaning we had no huge clean-up or removal costs."

## Particleboard Underlayment in Public Areas

Particleboard underlayment (PBU) is not visible in commercial installations because the product is constructed to function as unseen subflooring. Georgia-Pacific's PBU, for example, is designed to be covered with carpeting or other finish flooring material.

Robbins Sports Surfaces, a leading manufacturer of recreational floor surfaces, uses PBU in its portable dance floor line, a popular choice for hotels, convention centers, and catering/entertainment services.

"We use particleboard because it's more economical in a smaller size than plywood," explains Dr. Paul Elliott, research engineer for Robbins. "The panels can't be more than 3 feet by 3 feet to keep them light in weight for the hotel staffers who usually put them together."

Michael G's Restaurant and Banquet Facility in Cincinnati uses their Robbins portable floor weekly for dancing, buffets, and awards ceremonies, according to Tamara Mardis, sales and catering manager for the restaurant. "The flooring is durable and attractive," Mardis says, "but it's also important to us that it goes together easily because this shortens set up and break down time."

## The Future

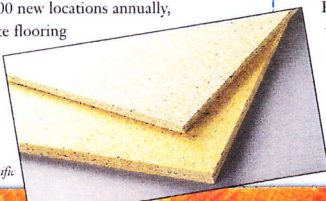
Composite panel flooring products are becoming more and more accepted for commercial installations, explain a range of flooring users and manufacturers.

Product development for this market is continual, fueling even greater interest in engineered wood products by architects and builders.

**Particleboard underlayment such as this Novafloor product from Georgia-Pacific, helps create a durable, economical and easy-to-install portable dance floor for Robbins Sports Surfaces.**



**Developers are increasingly installing laminate floors, such as this Uniboard Canada design, in new office buildings because of cost, maintenance and durability benefits.**



© Georgia-Pacific

**Bruce Laminate Floors' line of commercial flooring gives restaurateurs the look of solid wood floors without the maintenance headaches.**

## Laminate Flooring Goes Commercial

With residential acceptance of laminate flooring on the rise, it's no surprise that commercial establishments are also taking a shine to the product's durability, easy installation and care-free maintenance features.

"Manufacturers are continually developing products with extra wear, impact and moisture resistance in response to the demands of the commercial market," says Alison DeMartino, public relations manager for Wilsonart International, whose commercial laminate flooring installations include MSNBC Studios, Crabtree & Evelyn, J.C. Penney and Blockbuster. "Commercial buyers don't just consider the initial price of the product, but how long before they'll need to replace it."

"There are important differences between commercial and residential laminate flooring. For example, commercial flooring must withstand the abuse of heavy traffic and daily maintenance demands," says Jules Vallieres, vice president, sales and marketing for Uniboard Canada Inc., whose wide-ranging commercial laminate flooring installations include retail stores, campus residences and a major museum.

## High Style and Easy Maintenance

Available in increasing varieties of patterns and colors, laminate floors offer designers extensive style options, from wood grain and terra cotta looks to mix and match custom designs.



# Perpetually Renewing Forests Continue To Branch Out Thanks to SFI

The North American composite panel industry has grown dramatically in the past 40 years. Continued success is due in large part to the diversity and performance of industry products, but another reason is industry's commitment to the near-exclusive use of residual, recovered and recycled materials — typically wood, and more recently agricultural fiber as well.

A new forestry program — the award-winning Sustainable Forestry Initiative (SFI) — is consistent with this approach to environmental stewardship, and has taken root among US industrial and private forestland owners alike.

Guided by the SFI program, the 130-plus members of the American Forest & Paper Association (AF&PA) embarked on an ambitious goal several years ago: to ensure that future generations will have even more abundant forests than we have today. The core conviction is that sound environmental and business practices go hand in hand, according to W. Henson Moore, AF&PA president and CEO.

"With the SFI program, we have forged unprecedented alliances with environmental and conservation organizations as well as with universities, state and federal government agencies and the business community," Moore said.

The program's Expert Review Panel, an independent entity, encourages and critiques stringent standards. Progress in sustainable forestry management is already visible in woodlands across the United States. In fact, 1.5 million acres of land were added to the SFI program this past year alone, bringing the total to 56.5 million acres.

The focus is on prompt reforestation, the cornerstone of sustainable forestry. AF&PA members — who own approximately 90 percent of industrial forestland in the United States — are committed to reforesting their land within two years of final harvest by planting or direct seeding, or within five years using planned natural regeneration.

The AF&PA also encourages prompt reforestation on projects with private landowners,

who control 59 percent of US timberland. Member companies have provided more than 510 million free seedlings to non-industrial landowners to reforest more than 1.2 million acres of private forestland.

Logger training, another key outreach component, has made significant gains. In 1998, 85 percent of all wood sent to AF&PA member mills was delivered by trained loggers, up from 34 percent in 1995. In total, approximately 50,000 independent loggers have received training in sustainable forestry practices.

Outreach sometimes occurs on a global level. In response to Hurricane Mitch's devastation of thousands of acres of forest in Honduras, the AF&PA recently partnered with the US Department of Commerce to provide experts to assist in replanting and long-term management of the Honduran forests.

Wherever it takes place, reforestation is aimed at much more than timber production. It prevents soil erosion and protects the quality of water in streams and lakes, allowing wildlife to use the new woods for food, shelter and nesting. The SFI initiative has contributed \$247 million to research related to wildlife, bio-diversity, and ecosystem management.

From an 18th century rice mill in South Carolina to a bull trout habitat in Montana, SFI participants are also adjusting their harvesting operations to the public's demand for scenic

and recreational forests. And last year, some 13 million acres of forestland were entered into wildlife and fisheries agreements with conservation and public agencies.

Improving wood utilization has also been high on the agenda. Today the US forestry industry uses almost 100 percent of every log cut, from wood chips for pulp manufacturing to sawdust and wood shavings for building materials.

The SFI goal is to expand sustainable forestry to all 490 million acres of timberland in the United States. The words of Wisconsin logger Dennis Brown sum up the SFI/AF&PA philosophy: "When you think about it, this business isn't about today, it's about tomorrow. I want to make sure that there's plenty of timber to cut and woods to enjoy for future generations."



SFI members provide tens of millions of seedlings to private landowners at no cost each year for reforestation.

## The Composite Panel Association<sup>sm</sup>

The Composite Panel Association (CPA) brings together 36 North American producers of particleboard, medium density fiberboard and other compatible products, representing 90 percent of U.S./Canadian production capacity.

Serving as both industry beacon and advocate, the CPA represents the composite panel/engineered wood industry on technical, environmental, quality assurance and product acceptance issues.

Historically, the Association has been a vital resource for both producers and users of industry products. The CPA, as an ANSI accredited standards developer, writes and publishes industry product standards. It also participates in the standards development work of ASTM and others, sponsors product acceptance activities and works with federal agencies and model building code bodies. In addition, it conducts product-testing and third-party certification programs and helps manufacturers create in-plant quality-control programs.

Outreach and education are also prime goals of the CPA. The association conducts seminars to assist specifiers, manufacturers and other users of composite panels. It produces technical bulletins on installation and usage of particleboard and MDF, and develops publications, videos and other materials to inform key audiences about the attributes of industry products. Current publications include *Particleboard From Start To Finish*, *MDF From Start To Finish*, *MDF Standards*, *Particleboard Standards*, a *2000 Buyers and Specifiers Guide* and a series of *Technical Bulletins*.

The CPA also supports the Composite Wood Council, which includes in its membership furniture and cabinet manufacturers, equipment suppliers and CPA members. The mission of the 190-member Council is to communicate the attributes of engineered wood products to a broader audience, which includes consumers.

### WE'D LIKE TO HEAR FROM YOU

We welcome ideas from our readers and encourage you to contact us with information or leads regarding applications, installations and newsworthy uses of composite panel products by architects, builders and manufacturers. We also invite your queries for further information on any of the companies, products or processes mentioned in our articles. And we'd like to know of others in your company who would be interested in receiving this newsletter twice each year.

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## SIGN ON TO CYBER CAMP: New Web Site for Kids and Consumers

No lumpy sleepy bags or mosquitoes at this campsite — Camp Ecology, the newest web site of the Composite Panel Association and the Composite Wood Council, is up and running. The site's user-friendly design is something to write home about.

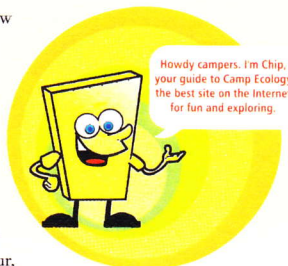
Geared to students and the average consumer, the new address features Chip, a cartoon host who puts some light-hearted zip into learning about industry products. Located at [www.campecology.com](http://www.campecology.com), Camp Ecology provides readily accessible general information on composite panel products, with an emphasis on their environmental benefits.

Cyber-savvy adults and kids find the browsing is easy as they discover the answers to such basic questions as what is particleboard, what is MDF, how is each product made, where it is used, and how does it help conserve forest resources?

In addition to the site's animated host, Camp Ecology presents other lively features, including a slide show plant tour, streaming video clips and ecology-oriented games that will be especially appealing to the Internet's youngest browsers.

Although it functions as a stand-alone site, Camp Ecology is also linked to the main CPA/CWC web site at [www.pbmdf.com](http://www.pbmdf.com), which attracts 1,500 to 2,000 visitors per month. Here web surfers log on for detailed industry and product information, including an online Buyers and Specifiers Guide, directions for using particleboard and MDF products, and help in locating product manufacturers.

Camp Ecology is designed for a more general audience, and promises to be a fun, informative experience, for kids as well as their moms and dads.





## ARCHITECT AT HOME WITH MDF (continued from p.1)

"I chose MDF because I wanted to put layers together, to create a sense of volume and not simply mass. I didn't want just a box with a door, but wanted the whole cabinet to have depth and volume," Shortridge says.

"Since MDF is a solid material, and consistent all the way through, it can be cut and layered. And because it's even and non-directional (no grain direction), cutting into MDF is like cutting into plastic," he continues. "The monolithic or even nature of MDF allows it to be pieced and formed together to create the volumetric effect I wanted."

Shortridge notes that MDF can present a challenge because its faces and edges take finishes differently. "To avoid this problem, I first applied a clear coat to the cabinetry as a sealer, so the stain wouldn't soak in immediately. I then applied the second sealer coat with a stain for a more even color finish on both edges and faces," he explains.

**Vibrant green finishes on MDF cabinets give this kitchen a "rakish energy."**

© David Phelps



The variety of finish treatments that can be accomplished with MDF intrigues architect Shortridge — and his clients.

"Unlike a painted finish, the stain allows MDF's particles of wood to remain visible, so you can still see the material in the product. Seeing into the wood in this way brings depth to the finished cabinets," he says. "The stain also adds a slightly orange tone that works well with the Douglas fir, which turns orange over time."

The innovative young architect has also used MDF creatively in clients' residences profiled in *Metropolitan Home*.

In the renovation of a 1939 Spanish-style home in Los Angeles, for example, the client requested bold colors in the kitchen, and Shortridge complied with a bright orange lacquer finish on the room's MDF cabinets and a vibrant lime green color on the room's steel elements. In a March/April 1997 feature on the project, *Metropolitan Home* wrote, "The vivid hues, complex rooflines and multi-angled windows give the room a rakish energy....Unlike most Hollywood sequels, (this) kitchen, aglow with color and light, far surpasses the original."

For a kitchen makeover in a Venice, California, bungalow, Shortridge also capitalized on color power, working with four related shades of green to meld the room's disparate elements into what he calls "a stronger oneness." As he explained in the September/October 1999 issue of *Metropolitan Home*, "The result emphasizes texture and materiality, so that the laminate, tile, wood and MDF maintain their individual integrity but also appear to stem from the same tree."

The magazine described the effect in glowing terms: "Shortridge unified the kitchen architecturally by choosing garden hues: Formica in English ivy for the countertop, an unglazed mosaic in moss green for the backsplash, a customized stain the color of new grass for the MDF cabinets and a custom-paint color that he calls 'leaf' on such wood trim as the doorframes."

"I'm aware that MDF is not manufactured to be stained in the way I often use it," says Shortridge, "but I expect to continue using it in the way I have been, for cabinetry, and some furniture."

When visitors inquire about the cabinetry in Shortridge's own home, the predominant question is: "What material is this?"

"Most people are surprised that the cabinets are made of something as simple as MDF," he says. "They expect me to tell them it's something much more expensive. Part of the effect is from the balance of MDF with wood, but the sealer and stain also provide a rich quality finish to the MDF. People are mainly surprised at how refined it looks."

"I had never seen MDF used this way," Shortridge comments. "Usually cabinets have an MDF core with a veneer, but thanks to the layering effect we created, you see the MDF coming through. Basically, we articulated the inner core of the cabinetry and read it to the outside."

"What I'm trying to do is express the integrity of the material," Shortridge concludes.

## You Read It in *The Wall Street Journal*, Page One

The Bible of the business community, *The Wall Street Journal* tells its over seven million readers where the action is — what's hot, what's new, what's coming and what's arrived.

In an August 26, 1999, front page story, *The Wall Street Journal* focused on composite panel products under the headline: "Is There Anything That You Can't Do With Particleboard?" Quoting architects, designers and furniture manufacturers across the country, staff writer James R. Hagerty laid out his findings, letting readers know that particleboard, MDF and other composite panel products are not only widely used but are increasingly visible, and here to stay.

"Designers...are starting to find beauty in particleboard, medium density fiberboard — known as MDF — and other so-called composite or engineered woods," Hagerty wrote. "These boards have long

lurked under veneers, laminates or foils printed to look like solid wood. Now, in some cases, they are shedding their skins and appearing on the surface of furniture, cabinets, closet doors and molding."

### Unique Look of Particleboard Shines Through

The article presents an array of unique applications that highlight rather than hide the material: caramel-colored particleboard squares coated with polyurethane for an office floor; composite panels coated with a clear finish for cabinets and closet doors; an \$89 coffee table with exposed particleboard edges; rectangles of particleboard stained blue and red surrounded by a border of clear lacquer-coated MDF on an award-winning conference table.

Hagerty also lays out the facts, noting that composites of all kinds accounted for about a third of

total U.S. wood production in 1997, and attributing the steady advance to cost benefits. He continued, "Another consideration is that the quality of composites has improved. Computerized machinery produces more consistent, reliable boards. Better glues make veneers less likely to peel off. Meanwhile, the quality of solid lumber has deteriorated."

"Unlike solid wood, many composites offer a uniform density with no knots or other flaws," he explained to his readers. "Composites also are less prone to expand or contract with changes in humidity."

Describing the wide-ranging uses of composite panel products — from kitchen cabinets to \$15,000 dining room tables to baseball bats — the reporter indicated that they're everywhere. As he advised *Wall Street Journal* readers: "The message is simple: Get used to it."

